**AP Statistics – Game Worksheet**

In your calculator run the program “GAME”. When you hit enter you will either WIN or LOSE.

Play the game 50 times and record the results below.

|  |  |  |
| --- | --- | --- |
|  | WIN | LOSE |
| Frequency |  |  |

1. What proportion of the time did you win the game? =
2. Does this seem to be a fair game (p=0.50)?
3. If you were to graph the entire class’ sample proportions, what should the sampling distribution of these sample proportions look like (what shape)?
4. Suppose that true proportion of winning this game is really 50%. What would be the model for the sampling distribution be? Check the conditions!
5. Using your model in #4, sketch the Normal Model on the graph below. Mark the 68-95-99.7% points.



1. Using your model in #4, what is the probability of getting ***your*** winning percentage (from #1) **or smaller**?
2. Do you think that the claim (p = 0.50) is true? Use #5 and 6 to answer.
3. How small would a sample proportion need to be for you to believe that the game is unfair (*p* ≠ 0.50)?